UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/799,526	LINDAHL ET AL.
	Examiner	Art Unit	
	FATIMAT O. OLANIRAN	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5,7-11,13-16,18 and 22-29* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5,7-11,13-16,18 and 22-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1, 4-5, 8-11, 18 and 22-29 have been considered but are moot in view of the new ground(s) of rejection necessitated by applicant's amendment.

2.   Applicant's arguments filed 9/18/2008 with regards to claims 13-16 have been fully considered but they are not persuasive.

With regards to the Yoshino reference (2004/0071299) applicant argues on page 10 of 12, "...At no point does Yoshino even remotely suggest (unlike the invention) that any attempt is made to configure the equalizer 32A with the six frequency bands using fewer than 6 band pass filters. In other words, for n frequency bands, n band pass filters are used..."

Examiner respectfully disagrees, as noted in the previous Office action, Yoshino discloses determining values of variable bands based on a fixed band (paragraph 49-51). The variable bands outnumber the fixed bands and are determined by the fixed band (paragraph 61-62). Therefore Yoshino discloses determining n filter bands based on m filter bands where m is less than n.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 4-5, 7-11, 18, 22-26 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sato (5541866).

Claim 1, Sato discloses a method for approximating an n-band (inherent) graphic

equalizer having n-band graphic equalizer settings associated with a media item

(abstract) using not more than m predetermined filter types (col. 2 line 1-13), wherein

each filter type is characterized as having a known frequency response shape (it is well

known that audio filters have frequency response shapes), where m is less than n (col.

4 line 20-21 and Fig. 10), said method comprising:

(a) classifying the n-band graphic equalizer settings by comparing a composite

frequency response shape representing the n-band graphic equalizer settings with at

least a portion of the frequency response shape of one or more of a plurality of

predetermined filter types (col. 2 line 1-13 and col. 4 line 10-23);

(b) determining parameters for the one or more of the predetermined filter types used to

classify the equalizer settings (col. 3 line 44-62);

(c) assigning a priority to each of the one or more predetermined filter types

used in the classification wherein the assigned priority is based on weighting values

associated with each of the one or more predetermined filter types (col. 3 line 44-50 and

col. 4 line 35-43); and

(d) selecting no more than m predetermined filter types having the highest priority

limiting the number of the one or more filters in the classification to not more than m

based on the priority assigned to each of the plurality of the predetermined filter types in

the classification (col. 4 line 19-21).

Claim 4 analyzed with respect to claim 1 Sato does not explicitly disclose, wherein n =

10.

However Sato discloses wherein n is at least 9 (Fig. 10-11). It would be obvious to one

of ordinary skill in the art at the time of the invention that design preference would

determine the number of bands in order to obtain a desired frequency resolution.

Claim 5 analyzed with respect to claim 1, Sato discloses wherein m is no more than

three (col. 4 line 20-22).

Claim 7 analyzed with respect to claim 1, Sato discloses wherein the predetermined

filter types in the classification are chosen from the group consisting of: a low-shelf, a

high-shelf and a parametric (col. 1 line 62-67, parametric).

Claim 8 analyzed with respect to claim 7 and 1, Sato discloses wherein the predetermined filter types in the classification include not more than one low- shelf and not more than one high-shelf (col. 4 lines 20-22).

Claim 9 analyzed with respect to claim 1, Sato discloses wherein the classification approximates the equalizer setting values through use of a minimum number of the predetermined filter types (col. 4 lines 10-23).

Claim 10 analyzed with respect to claims 1, Sato does not explicitly disclose wherein the predetermined filter types are second order recursive filters.
Examiner takes Official Notice on the limitation second order recursive filters. Second order recursive filters are well known in the art at the time of the invention. In addition implementations as notch or peak filters are well known in the art at the time of the invention therefore it would be obvious to one of ordinary skill in the art at the time of the invention to implement the filter types of Sato as second order recursive filters in order to have a fast and east to implement filter.

Claim 11 analyzed with respect to claim 1, Sato discloses wherein the filters are digital filters (col. 19 line 25-26).

Claim 18, Sato discloses a processor (Fig. 1 element 2 and col. 3 line 44-50) for

approximating an n-band (inherent) graphic equalizer having n-band graphic equalizer

settings for a computing device (abstract) using not more than m predetermined filter

types (col. 2 line 1-13), wherein each predetermined filter type is characterized as

having a known frequency response shape (it is well known that audio filters have

frequency response shapes), wherein m is less than n (col. 4 line 20-21 and Fig. 10),

said computer readable medium comprising:

(a) computer for classifying the n-band graphic equalizer settings by comparing a

composite frequency response shape representing the n-band graphic equalizer

settings with at least a portion of the frequency response shape of one or more of the a

plurality of predetermined filter types (col. 2 line 1-13 and col. 4 line 10-23);

(b) computer for determining parameters for the one or more of the of predetermined

filter types used to in classifying the equalizer settings (col. 3 line 44-62);

(c) computer for assigning a priority to each of the one or more predetermined filter

types used in the classification wherein the assigned priority

is based on weighting values associated with each of the one or more of the

predetermined filter types (col. 3 line 44-50 and col. 4 line 35-43); and

(d) computer for selecting no more than m predetermined filter types having the highest

priority limiting the number of the one or more filters in the classification to not more

than m based on the priority assigned to each of the plurality of the predetermined filter

types in the classification (col. 4 line 19-21).

Sato does not explicitly disclose a computer readable medium and computer code;
however it would be obvious to one of ordinary skill in the art at the time of the invention
that a computer that performs signal processing of input data in order to generate new
data such as Sato's microcomputer (Fig. 1 element 2 and col. 3 line 35-60) includes
computer code and a computer readable medium.

Claim 22 analyzed with respect to claim 18, Sato discloses wherein the predetermined
filter types in the classification are chosen from the group consisting of: a low- shelf, a
high-shelf and a parametric (col. 1 line 62-67, parametric).

Claim 23, Sato discloses a system for approximating an n-band graphic equalizer using
not more than m filters (abstract and col. 2 line 1-13), where m is less than n (col. 4 line
20-21 and Fig. 10), said system comprising:

(a) means for classifying the n-band graphic equalizer settings by comparing a
composite frequency response shape representing the n-band graphic equalizer
settings with at least a portion of a the frequency response shape of one or more of the
predetermined filter types (col. 2 line 1-13 and col. 4 line 10-23);

(b) means for determining parameters for the one or more of the plurality of
predetermined filter types used to in classifying the equalizer settings (col. 3 line 44-62);

(c) means for assigning a priority to each of the one or more predetermined filter
types used in the classification wherein the assigned priority is based on weighting

values associated with each of the one or more predetermined filter types (col. 3 line

44-50 and col. 4 line 35-43); and

(d) means for selecting no more than m predetermined filter types having the

highest priority (col. 4 line 19-21).

Sato does not explicitly disclose for use on a device having limited computational

resources or computational time. However it would be obvious to one of ordinary skill in

the art at the time of the invention that limited computational resources or time is a

largely subjective determination and that limited computational resources or time is a

characteristic of audio equalizers.

Claim 24 analyzed with respect to claim 23, wherein said system is an embedded

system (Fig. 1 element 2 and col. 3 lines 44-60).

Claim 25 analyzed with respect to claim 23, Sato discloses in the prior art wherein the

system is a portable computing device (col. 1 line 18-24).

Claim 26 analyzed with respect to claim 23, Sato discloses in the prior art wherein the

system is a hand-held media player (col. 1 line 18-24).

5.   Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Yoshino (2004/0071299) in view of Wiser et al (7016746).

Claim 13, Yoshino discloses a method for approximating n-band graphic equalizer

settings associated with a media item using less than n filters, said method comprising

(paragraph 14 and paragraph 17) :

(c) examining the equalizer setting values other than the first set for

 approximate correlation to at least a portion of a frequency response of a parametric

type filter (paragraph 61, line 2-8);

(d) selecting the parametric type filter if a second set of the equalizer settings

approximately correlate (paragraph 61, line 2-8); and

(e) determining parameters for the shelf type filter and the parametric

type filter, (paragraph 64, line 1-5).

Yoshino does not disclose (a) examining the equalizer setting values for approximate

correlation to at least a portion of a frequency response of a shelf type filter;

(b) selecting the shelf type filter if a first set of the equalizer setting values approximately

correlate; wherein at least the shelf type filter and the parametric type filter

are used to approximate the n-band graphic equalizer settings for the media

player.

Wiser discloses (a) examining the equalizer setting values for approximate correlation to

at least a portion of a frequency response of a shelf type filter;

(b) selecting the shelf type filter if a first set of the equalizer setting values approximately

correlate (col. 8 line 41-47); wherein at least the shelf type filter and the parametric type

filter are used to approximate the n-band graphic equalizer settings for the media

player (col. 8 line 50-54). Therefore it would be obvious to one of ordinarily skilled in the

art at the time the invention was made to modify the graphic equalizer of Yoshino with

the shelving filters of Wiser in order to provide signal boosts or cuts for a desired

frequency range.

Claim 14 analyzed with respect to claim 13, Yoshino further discloses, wherein said

method approximates the n-band graphic equalizer settings for the media item using not

more than m of the filters (paragraph 61, line 2-8, m=1).

Claim 15 analyzed with respect to claim 13, Yoshino further discloses wherein the filters

are digital filters (paragraph 55, line 1-4).

Claim 16 analyzed with respect to claim 13, Yoshino discloses wherein the equalizer,

settings within the first set are adjacent one another, and wherein the equalizer settings

within the second set are adjacent one another (paragraph 61, line 2-8, variable filters

are adjacent tone another).

6.   Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sato (5541866) in view of Hall et al (2005/0069153).

Claim 27, Sato discloses a media device, comprising: a data store for storing media

data received from a computer (Fig. 1element 2 and col. 3 line 44-50), the media data

including media content and equalizer setting information for at least one media item

(col. 3 line 44-50); and a processor operatively connected to said data store, said

processor operates to acquire n-band equalizer setting values based on the equalizer

setting information, to approximate the n-band equalizer setting values with a reduced

filter order approximation (col. 3 line 44-63) by:

(a) classifying the n-band graphic equalizer settings by comparing a composite

frequency response shape representing the n-band graphic equalizer settings with at

least a portion of the frequency response shape of one or more of the predetermined

filter types (col. 2 line 1-13 and col. 4 line 10-23);

(b) determining parameters for the one or more of the predetermined filter types used

to in classifying the equalizer settings (col. 3 line 44-62);

(c) assigning a priority to each of the one or more predetermined filter types used in the

classification wherein the assigned priority is based on weighting values associated with

each of the one or more predetermined filter types (col. 3 line 44-50 and col. 4 line 35-

43); and

(d) selecting no more than m predetermined filter types having the highest

priority and to present the media content at said media player in accordance with the

reduced filter order approximation (col. 4 line 19-21).

Sato does not explicitly disclose a data store for storing media data received from a host

computer.

Hall discloses a data store for storing media data received from a host computer (Fig. 1A and paragraph 27).

Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to modify the microcomputer of Sato with networking means and external storage means in order to send and receive audio data.

Claim 28 analyzed with respect to claim 27, Sato does not explicitly disclose wherein said data store comprises a hard drive that stores the media data. Examiner takes Official Notice on the limitation hard drive. Hard drives are well known in the art at the time of the invention therefore it would be obvious to one of ordinary skill in the art at the time of the invention to include a hard drive in the media item of Sato in order to store large amounts of data.

Claim 29 analyzed with respect to claim 27, Sato discloses in the prior art wherein said media device is a hand-held media player (col. 1 line 18-24).

Conclusion

1.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FATIMAT O. OLANIRAN whose telephone number is (571)270-3437. The examiner can normally be reached on M-F 10:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FO

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614